



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,185	07/30/2001	Stuart A. Kauffman	9392-023-999	7548
826	7590	09/23/2005		
ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000			EXAMINER DUONG, FRANK	
			ART UNIT 2666	PAPER NUMBER

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/890,185

Applicant(s)

KAUFFMAN ET AL.

Examiner

Frank Duong

Art Unit

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is a response to communications dated 07/30/01. Claims 1-50 are pending in the application.

Information Disclosure Statement

2. The information disclosure statement filed 07/30/01 complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. It has been considered and placed in the application file.

Claim Objections

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered first claim 50 been renumbered 48.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

Art Unit: 2666

patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 30, 38 and 49-50 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 22 of U.S. Patent No. 6,842,746. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following rationales.

Instant application claims 30, 38 and 49-50 call for:

Claim 30: A method for routing packets of data through a network of components comprising the steps of: defining at least one algorithm having one or more parameters for **routing the data**; defining at least one global performance measure of said at least one algorithm; executing said algorithm for a plurality of different values of said one or more parameters to generate a corresponding plurality of values for said global performance measure; constructing a fitness landscape from said values of said parameters and said corresponding values of said global performance measure; and optimizing over said landscape to generate optimal values for said at least one parameters.

Claim 38: A method for performance operations management in an environment of a plurality of entities comprising the steps of: defining at least one algorithm having one or more parameters for **routing the data**; defining at least one global performance measure of said at least one algorithm; executing said algorithm for a plurality of different values of said one or more parameters to generate a corresponding plurality of

Art Unit: 2666

values for said global performance measure; constructing a fitness landscape from said values of said parameters and said corresponding values of said global performance measure; and optimizing over said landscape to generate optimal values for said at least one parameters.

Claim 49: Computer executable software code stored on a computer readable medium, the code for routing packets of data through a network comprising at least one memory having at least one region storing computer executable program code and at least one processor for executing the program code stored in said memory, wherein the program code comprises: **code to define** at least one algorithm having one or more parameters for **routing the data**; **code to define** at least one global performance measure of said at least one algorithm; **code to execute** said algorithm for a plurality of different values of said one or more parameters to generate a corresponding plurality of values for said global performance measure; **code to construct** a fitness landscape from said values of said parameters and said corresponding values of said global performance measure; and **code to optimize** over said landscape to generate optimal values for said at least one parameters.

Claim 50: A programmed component for routing packets of data through a network of components, the code comprising: **code to define** at least one algorithm having one or more parameters for **routing the data**; **code to define** at least one global performance measure of said at least one algorithm; **code to execute** said algorithm for a plurality of different values of said one or more parameters to generate a corresponding plurality of values for said global performance measure; **code to**

construct a fitness landscape from said values of said parameters and said corresponding values of said global performance measure; and **code to optimize** over said landscape to generate optimal values for said at least one parameters.

Patent claim 22 claims:

A method for **performance operations management in an environment of a plurality of resources** comprising the steps of: defining at least one algorithm having one or more parameters for **performing operations management**; defining at least one global performance measure of said at least one algorithm; executing said algorithm for a plurality of different values of said one or more parameters to generate a corresponding plurality of values for said global performance measure; constructing a fitness landscape from said values of said parameters and said corresponding values of said global performance measure; and optimizing over said landscape to generate optimal values for said at least one parameters.

Note: As evidence above, claim 22 of patent '746 teaches essentially the same subject matter as claims 30, 38 and 49-50 of the current application. There is a slight difference in the wording as highlighted above. Such difference is deemed to be obvious to those skilled in the art.

5. Claims 31-37, 39-46 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 28 of U.S. Patent No. 6,842,746 in view of Zonoun (USP 6,487,172).

Regarding **claim 31**, in addition to features recited in base claim 30 (see rationales discussed above), patent '746 fails to further teach the limitations of "*wherein said defining an algorithm step comprises the steps of: controlling one or more of said components by executing a corresponding one or more software agents comprising the steps of: communicating information for at least one of the packets among said one or more software agents; computing an expected return for delivery of said at least one packet from said information; and directing the delivery of said at least one packet to optimize said expected return*". However, such limitations lacks thereof from patent '746 are well known and taught by Zonoun.

In accordance with Zonoun reference entirety, Zonoun teaches a method for selecting a route to a destination for a data packet using a bidding algorithm ('172; Fig. 6), comprising, among other limitations, the limitations of *an algorithm step* ('172; Fig. 6) *comprises the steps of: controlling one or more of said components by executing a corresponding one or more software agents (border gateway) (col. 6, line 13, Zonoun discusses the algorithm is in the form of software or firmware) comprising the steps of: communicating information for at least one of the packets among said one or more software agents (Fig. 6; steps 41-42 and 44 and col. 6, lines 32-40); computing an expected return for delivery of said at least one packet from said information (Fig. 6; step 46 and col. 6, lines 45-47 and thereafter); and directing the delivery of said at least one packet to optimize said expected return (Fig. 6; step 47 and col. 6, lines 47-54) to determine a desirable route for the transfer of data packet* ('172, col. 1, lines 40-50).

Thus, it would have been obvious to those skilled in the art at the time of the invention, having patent '746 and patent '172 readily available, to implement Zonoun's teaching into '746 patent's method to arrive the claimed invention with a motivation to *determine a desirable route for the transfer of data packet ('172, col. 1, lines40-50).*

Claims 32-36 are corresponding to claims 23-29 of the '746 patent. Even though claims 32-46 of the instant application are broadened by omitting certain limitations (*i.e., limitations in claim 23 of the '746 patent*), it has been held that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function as before. *In re Karlson*, 136 USPQ 184(CCPA). Also note *Ex Parte Rainu*, 168 USPQ 375 (Bd. App. 1969); omission of a reference whose function is not needed would be an obvious variation.

Regarding **claim 39**, in addition to features recited in base claim 38 (see rationales discussed above), patent '746 fails to further teach the limitations of "*wherein said representing at least one of the entities with at least on corresponding model having a plurality of parameters step comprises the steps of: representing a plurality of decision making units within the entities with a corresponding plurality of decision making agents; and representing a plurality of communication links among the decision making units with a corresponding plurality of connections among said plurality of decision making agents*". However, such limitations lacks thereof from patent '746 are well known and taught by Zonoun.

In accordance with Zonoun reference entirety, Zonoun teaches a method for selecting a route to a destination for a data packet using a bidding algorithm ('172; Figs

Art Unit: 2666

1-4), comprising, among other limitations, the limitations of *"wherein said representing at least one of the entities with at least on corresponding model having a plurality of parameters step comprises the steps of: representing a plurality of decision making units within the entities with a corresponding plurality of decision making agents (Fig. 1 depicts Border Gateways A1-A4 associated with Company A and Border Gateways B1-B2 associated with Company B. The Border Gateways are the decision making units); and representing a plurality of communication links among the decision making units with a corresponding plurality of connections among said plurality of decision making agents (Fig. 1 depicts communication links between Host A and Host B through Border Gateways A1-A4 and B1-B2" to determine a desirable route for the transfer of data packet ('172, col. 1, lines 40-50).*

Thus, it would have been obvious to those skilled in the art at the time of the invention, having patent '746 and patent '172 readily available, to implement Zonoun's teaching into '746 patent's method to arrive the claimed invention with a motivation to *determine a desirable route for the transfer of data packet ('172, col. 1, lines 40-50).*

Regarding **claim 40**, in addition to features recited in base claim 39 (see rationales discussed above), '746 patent in view of '172 patent further discloses communicating information among said decision making agents ('172; *Fig. 4; Requester sends Bid Request*); computing an expected return at said decision making agents from said information ('172; *Fig. 4, BG-A4 20 executes bidding algorithm*); and making at least one decision at said decision making agent to optimize said expected return ('172; *Fig. 4, BG-A4 20 returns Bid Metric to the Requester*) (*col. 5, line 31 to col. 6, line 17*).

Claims 41-46 are corresponding to claims 23-29 of the '746 patent. Even though claims 32-46 of the instant application are broadened by omitting certain limitations (*i.e.*, *limitations in claim 23 of the '746 patent*), it has been held that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function as before. *In re Karlson*, 136 USPQ 184(CCPA). Also note *Ex Parte Rainu*, 168 USPQ 375 (Bd. App. 1969); omission of a reference whose function is not needed would be an obvious variation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-29 and 47-48 are rejected under 35 U.S.C. 102(e) as being anticipated by Zonoun (USP 6,487,172).

Regarding **claims 1 and 47-48**, in accordance with Zonoun reference entirety, Zonoun teaches a method/computer/program code for selecting a route to a destination for a data packet using a bidding algorithm ('172; Fig. 6), comprising, among other limitations, the steps/codes ('172; Fig. 6) for controlling one or more of said components by executing a corresponding one or more software agents (*border gateway*) (col. 6,

line 13, Zonoun discusses the algorithm is in the form of software or firmware) to
includes the steps/codes for:

receiving/communicating information for at least one of the packets among said
one or more software agents (Fig. 6; steps 41-42 and 44 and col. 6, lines 32-40);

computing an expected return for delivery of said at least one packet from said
information (Fig. 6; step 46 and col. 6, lines 45-47 and thereafter); and

directing the delivery of said at least one packet to optimize said expected return
(Fig. 6; step 47 and col. 6, lines 47-54).

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales
discussed above), Zonoun further discloses wherein said information for said at least one
packet comprises a destination (col. 6, line 34 or Fig. 5; block 31).

Regarding **claim 3**, in addition to features recited in base claim 2 (see rationales
discussed above), Zonoun further discloses wherein said information for said at least
one packet further comprises a contract to pay a specified reward to said one or more
software agents that delivers said at least one packet to said destination (*col. 7, lines 56-58*).

Regarding **claim 4**, in addition to features recited in base claim 3 (see rationales
discussed above), Zonoun further discloses wherein said information of said at least
one packet further comprises a specified quality of service (*col. 3, lines 25-28 or col. 7, lines 56-58*).

Regarding **claim 5**, in addition to features recited in base claim 4 (see rationales
discussed above), Zonoun further discloses wherein said specified reward varies with a

delivered quality of service in comparison with said specified quality of service (*col. 3, lines 25-28 or col. 7, lines 56-58*).

Regarding **claims 6-8**, in addition to features recited in base claim 4 (see rationales discussed above), Zonoun further discloses wherein said information for said at least one packet further comprises at least one bid specifying a price that said one or more software agent will pay for said at least one packet having said destination and said quality of service (*col. 7, lines 38-58 and hereinbefore*).

Regarding **claims 9-16**, in addition to features recited in base claim 1 (see rationales discussed above), Zonoun further discloses wherein said information for said at least one packet further comprises at least one bid specifying a price that said one or more software agent will pay for said at least one packet to include route, cost, and delay (*col. 7, lines 38-58 and hereinbefore*).

Regarding **claims 17-19**, in addition to features recited in base claim 1 (see rationales discussed above), Zonoun further discloses the routing metrics for delivery said one packet including cost, and delay (*col. 7, lines 38-58 and hereinbefore*).

Regarding **claims 20-21**, in addition to features recited in base claim 1 (see rationales discussed above), Zonoun further shows the link connections between the elements in Figure 1 and discloses the Border Gateways performs the decision-making process (*col. 7, line 28 and thereafter*).

Regarding **claims 22-25**, in addition to features recited in base claim 1 (see rationales discussed above), Zonoun further shows a design and implement a routing system supporting the bidding algorithm for the practice of the present invention in

Figure 4. At col. 5, line 31 to col. 6, line 18, Zonoun further discloses program 22 is utilized to control the router 20 to respond appropriately with the bid requests in the form of software or firmware. The recitation thereat reads on the claimed limitations in a manner as claimed.

Regarding **claims 26-29**, in addition to features recited in base claim 1 (see rationales discussed above), Zonoun further discloses the software and firmware corresponding to Figure 4 for carrying out the bidding algorithm for selecting a desirable route for delivery a packet (*col. 6, lines 9-18 and thereafter*).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johnson et al (USP 5,995,602).

Kinnear, Jr, Fitness Landscapes and Difficulty in Genetic Programming, IEEE, pages 142-147, 1994.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is 571-272-3164. The examiner can normally be reached on 7:00AM-3:30PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2666

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Frank Duong', with a stylized flourish at the end.

**FRANK DUONG
PRIMARY EXAMINER**

September 20, 2005